

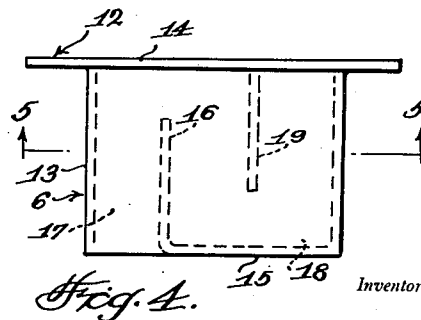
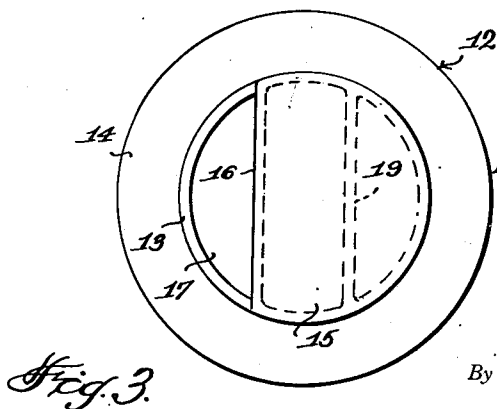
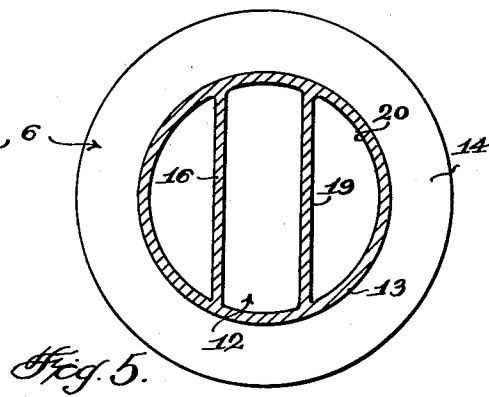
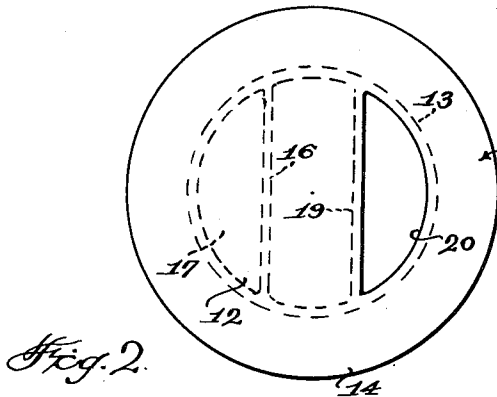
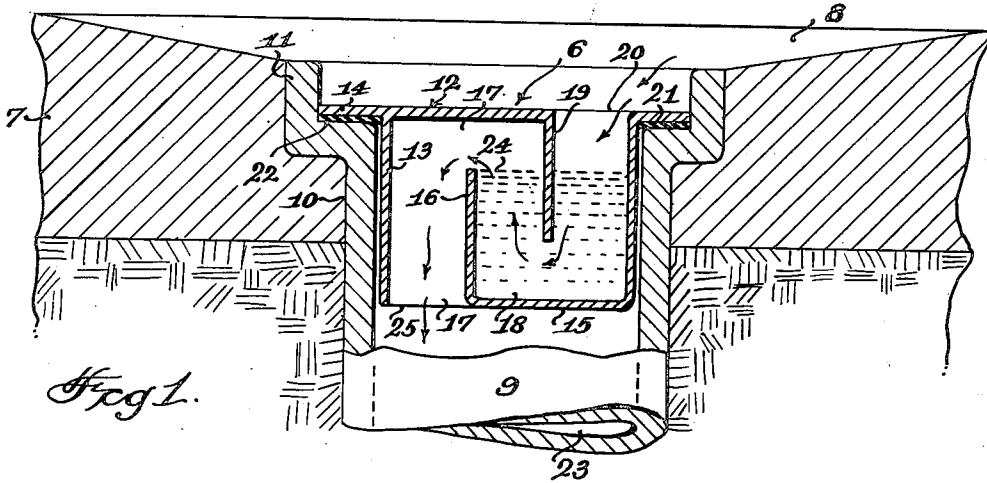
July 15, 1952

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2,603,304

DRAIN TRAP

Filed Sept. 22, 1950



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2,603,304

DRAIN TRAP

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Application September 22, 1950, Serial No. 186,287

4 Claims. (Cl. 182-9)

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This invention relates to a novel construction of drain trap capable of efficiently functioning to provide a water seal in a drain to prevent odors and gases rising from the drain.

More particularly, it is a primary object of the present invention to provide a drain trap of extremely simple construction capable of being quickly and easily applied to or removed from an existing drain conduit without modification of the conduit and without requiring the fastening of the trap thereto or therein so that the trap may be applied or removed at will and will fit any drain of a given size.

Another object of the invention is to provide a drain trap of extremely simple construction capable of being very economically manufactured and sold yet which will be extremely efficient and durable for effectively accomplishing its intended purpose.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a vertical sectional view, partly in side elevation showing a portion of the drain and illustrating the trap in vertical section applied thereto;

Figure 2 is a top plan view of the trap shown removed from the drain;

Figure 3 is a bottom plan view thereof;

Figure 4 is a side elevational view of the trap, and

Figure 5 is a cross sectional view thereof taken substantially along a plane as indicated by the line 5-5 of Figure 4.

Referring more specifically to the drawing, for the purpose of illustrating a preferred application and use of the drain trap, designated generally 6 and comprising the invention, the numeral 7 designates a surface portion having a depression 8 in the upper side thereof, such as a portion of a basement or cellar floor. The upper part of a drain conduit 9 is shown extending upwardly through an opening 10 of the surface portion 7 and said conduit is of the conventional type having a flared or bell-shaped enlarged open upper end 11, the upper edge of which is flush with the central bottom portion of the depression 8. The parts 7 to 11, inclusive, are conventional in drains and it is to be understood that the drain trap 6 is not intended to be limited to a cellar drain but is equally applicable to other types of drains.

The drain trap 6 may be formed of any suit-

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able material and includes a top plate, designated generally 12 which is provided with a depending wall 13 which is preferably but not necessarily formed integral therewith. The wall 13 is shown as being annular although the size and shape of said wall will obviously vary depending upon the size and shape of the conduit 9, as will hereinafter become apparent. The wall 13 is spaced from the periphery of the plate 12 so that the outer portion of the plate 12 between its periphery and the wall 13 forms an annular flange 14. Likewise, while the plate 12 is shown as being circular, the size and shape of said plate including its flange 14 will likewise obviously vary depending upon the size and shape of the conduit 9 and of its bell portion 11.

The trap 6 includes a bottom 15 shown as being formed integral with a portion of the bottom edge of the wall 13 but which could be suitably secured thereto and which bottom 15 partially closes the lower end of the annular wall 13. The bottom 15 is provided with an upstanding partition wall 16 which is shown as being formed integral therewith and the upper edge of which terminates beneath and spaced from the top plate 12. The side edges of the partition wall 16 are formed integral with or suitably secured to portions of the side wall 13 to provide a liquid tight connection and so that said partition wall 16 combines with a limited portion of the side wall 13 to provide a passage 17 which opens outwardly of the lower end of the trap 6 and into the upper portion of said trap beneath a portion of the top plate 12. Likewise, the partition wall 16 combines with the remainder of the side wall 13 which is disposed beneath the level of its upper edge and with the bottom 15 to form a receptacle 18.

The top plate 12 is provided with an integral depending partition 19 which extends downwardly therefrom into the receptacle 18 and which terminates above and spaced from the bottom 15. The partition 19 is preferably disposed substantially parallel to the partition wall 16 and equally spaced from said partition wall and the portion of the wall 13 which is located remote to the partition wall and is preferably spaced from the bottom 15 a distance corresponding to the space between the upper end of the partition wall 16 and the top plate 12. The side edges of the partition 19 are likewise suitably connected to portions of the side wall 13 to provide a liquid tight connection. The top plate 12 is provided with an opening 20 between the upper end of the par-

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tion 19 and the portion of the side wall 13, disposed adjacent thereto.

An annular gasket 21 is disposed around the upper portion of the side wall 13 and against the underside of the flange 14, said gasket being formed of any suitable waterproof material which is preferably compressible, such as rubber.

From the foregoing it will be readily apparent that the trap 6 with the gasket 21 applied thereto may be readily dropped into the upper end of the drain conduit 9 so that the annular flange 14 which is of a diameter slightly less than the internal diameter of the bell-shaped conduit portion 11 will then be disposed in said bell-shaped portion 11 and with the gasket 21 thereof resting upon the upwardly facing shoulder 22 of the portion 11. The trap 6 will thus be supported in the conduit 9 and with the annular wall 13, which has an external diameter slightly less than the internal diameter of the bore 23 of the conduit 9, loosely disposed in the upper portion thereof. The trap 6 will thus be supported with its receptacle 18 opening upwardly and as the flange 14 and gasket 21 will substantially seal the conduit 23 around the trap 6 any flow of liquid or gases through the conduit 9 from above to below the trap will have to be through the trap interior. Accordingly, drainage water and other liquids on the member 7 will drain over its recess surface 8 by gravity into the bell portion 11 of the conduit 9 and will enter the trap 6 through its opening 20 and flow into the trap receptacle 18. When this liquid, as indicated at 24, fills the receptacle 18 up to the level of the upper edge of the partition 16 it will thereafter overflow the upper edge of the partition 16 and will then flow downwardly by gravity through the outlet trap passage 17 and will be discharged therefrom through the open bottom of the passage 17 formed by the opening 25 in the bottom portion of the trap 6 and will thus be returned to the conduit 9 below the level of the trap 6. The partition 19 extends downwardly into the receptacle 18 to substantially below the liquid level 24 so that the liquid in the receptacle 18 forms a liquid seal to prevent obnoxious gases rising through the conduit 9 and being released from its upper end since the liquid in the receptacle 18 will prevent such gases from passing through the trap 6.

From the foregoing it will be readily apparent that an odor trap of extremely simple construction has been provided which is capable of being demountably supported in a conventional sewer or drain conduit without in any way modifying the conduit and without requiring the use of any fastenings for retaining the trap in an applied position so that the trap may be quickly and easily lifted out of the conduit for the purpose of cleaning and as easily replaced by merely lowering the trap back into the conduit 9. As previously mentioned, the trap 6 may be made in various sizes and shapes to fit drain conduits of different sizes and different cross sectional shapes. While it is essential that the partitions 16 and 19 only overlap sufficiently so that the lower end of the partition 19 will be disposed beneath the water level 24, said partition 19 preferably extends downwardly to substantially below the upper edge of the partition 16 so that if the drain conduit 9 is not disposed in an upright or vertical position and the trap 6 is supported thereby at an incline, the water level in the receptacle 18 will still be above the lower edge of the partition 19.

Various other modifications and changes are

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contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A drain trap comprising, in combination with a drain conduit having an internally enlarged upwardly open upper end defining an upwardly facing shoulder surrounding the bore portion of the conduit disposed therebeneath, a surrounding wall constituting a part of said trap and sized to loosely fit in the conduit below its enlarged upper portion, said surrounding wall having a partial bottom wall and a partial top wall at its lower and upper ends, respectively, disposed in offset relationship to one another, an upstanding partition wall rising from said bottom wall and secured to the surrounding wall and combining therewith to form a restricted upwardly opening receptacle, said partition wall combining with one portion of the surrounding wall to define a downwardly opening passage having an upper end closed by said top wall and opening into the receptacle, a partition extending downwardly into the receptacle from said top wall and connected at its side edges to portions of the surrounding wall and combining with another portion of the surrounding wall to define an entrance passage into the receptacle having a lower end opening beneath the upper edge of the partition wall, and said surrounding wall having an uninterrupted outturned flange at its upper edge loosely disposed in the enlarged upper portion of the conduit and resting upon the upwardly facing shoulder thereof for demountably supporting the trap in the conduit.

2. A drain trap as in claim 1, said partition extending into the receptacle to a point substantially below the level of the upper edge of the partition wall.

3. A drain trap as in claim 1, and sealing means engaging said flange and upwardly facing shoulder for sealing the conduit around the trap.

4. A drain trap comprising, in combination with a drain conduit having an internally enlarged upwardly open upper end defining an uninterrupted upwardly facing shoulder surrounding the bore portion of the conduit disposed directly therebeneath, an uninterrupted surrounding wall constituting a part of the drain trap fitting loosely in said bore portion of the conduit, a restricted bottom secured to the lower edge of a portion of said surrounding wall, a partition wall rising from said restricted bottom having side edges connected to portions of the surrounding wall and combining with a part of the surrounding wall to define a downwardly opening outlet passage, a restricted top wall offset from the bottom wall and closing the upper end of said outlet passage, a partition extending downwardly from said restricted top wall having side edges connected to portions of the surrounding wall and extending to below the level of the upper edge of the partition wall and combining with another part of the surrounding wall to define an upwardly opening inlet passage having a lower end opening above said restricted bottom and below the level of the upper edge of the partition wall, said partition and partition wall being spaced from one another and interposed between the passages, and an uninterrupted outwardly extending flange secured to the upper edge of said surrounding wall and fitting loosely in the internally enlarged upper portion of the conduit and resting upon the upwardly facing

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shoulder thereof to combine therewith for sealing the conduit around the trap and for demountably supporting the trap in the conduit.

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